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Congenital Cardiology Solutions

LONG-TERM PROGNOSTIC IMPACT OF DOBUTAMINE STRESS ECHOCARDIOGRAPHY IN PATIENTS WITH KAWASAKI DISEASE AND CORONARY ARTERY LESIONS: A 15-YEAR FOLLOW-UP STUDY

Poster Contributions
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Background: Although dobutamine stress echocardiography (DSE) is an established technique for the detection and prognostic stratification of coronary artery disease, the prognostic utility of DSE in adolescents and young adults with Kawasaki disease (KD) and coronary artery lesions (CALs) to predict cardiac events is unknown.

Methods: To determine the prognostic value of DSE involving a 15-year follow-up for predicting cardiac events, 58 patients (pts) (mean age:12.7±4.7 years) at the convalescent stage of KD, including 36 pts with CALs documented by previous coronary angiography and 22 pts with normal coronary artery documented by echocardiography who underwent DSE repeatedly, were reviewed at the initial testing (I) (mean age 13.6±4.4 years) and at a 15-year follow-up (F). Follow-up events were tabulated as cardiac death, nonfatal myocardial infarction, and revascularization.

Results: During a mean follow-up of 14.7 years, there were 8 pts (13.7%) with revascularization (CABG 4 pts, PTCRA 4 pts) and 8 pts (13.7%) with nonfatal myocardial infarction (AMI 1 pt, OMI 7 pts) without any cardiac death. Significant coronary artery disease (CAD) (>70% diameter reduction) was detected in 18 pts (31.0%) at (I), and 24 pts (41.3%) at (F). DSE was positive in 22 pts (37.9%) at (I) and 28 pts (48.2%) at (F). Thus, the sensitivity and specificity of DSE for the detection of CAD were 74 and 95% at (I) and 92 and 96% at (F), respectively. While, no significant difference was observed in wall motion score index (WMSI) at peak stress by DSE between (F) and (I) (1.18±0.14 vs. 1.17±0.15). Five (85%) of 6 pts with false positive DSE (WMSI≥1.25) at (I) who all had giant aneurysms (≥8 mm) without CAD, developed significant CAD with cardiac events at (F). Cumulative event free survival to 15 years was 25.0% in pts with WMSI≥1.25 and 91.7% in pts with WMSI<1.25, respectively. Cox regression analysis showed the grade of peak WMSI(1 to 5) at (I) to be the only independent predictor of future cardiac events (RR:3.28, 95% CI:1.73 to 6.20, p=0.0003).

Conclusions: DSE provided optimal risk stratification and independent prognostic information up to 15 years after the initial testing in pts with KD and CALs regardless of the existence of CAD.